**State of New Hampshire**
**Department of Environmental Services**
**Air Resources Division**

# Temporary Permit

**Permit No:** TP-0092
**Date Issued:** September 13, 2011

This certifies that:

**Sprague Energy Corporation**
**Two International Drive, Suite 200**
**Portsmouth, NH 03801**

has been granted a Temporary Permit for:

**Replacement of an existing boiler and modifications to a second existing boiler**

at the following facility and location:

**Sprague Energy Corporation – River Road Terminal**
**372 Shattuck Way**
**Newington, NH 03801**

Facility ID No: **3301500039**
Application No: **11-0086**, received June 23, 2011

which includes devices that emit air pollutants into the ambient air as set forth in the permit application referenced above which was filed with the New Hampshire Department of Environmental Services, Air Resources Division (Division) in accordance with RSA 125-C of the New Hampshire Laws. Request for permit renewal is due to the Division at least 90 days prior to expiration of this permit and must be accompanied by the appropriate permit application forms.

This permit is valid upon issuance and expires on **March 31, 2013**.

COPY

Director
Air Resources Division

**Abbreviations and Acronyms**

| | |
|---|---|
| AAL | Ambient Air Limit |
| acf | actual cubic foot |
| ags | above ground surface |
| ASTM | American Society of Testing and Materials |
| Btu | British thermal units |
| CAS | Chemical Abstracts Service |
| cfm | cubic feet per minute |
| CFR | Code of Federal Regulations |
| CO | Carbon Monoxide |
| DER | Discrete Emission Reduction |
| DES | New Hampshire Department of Environmental Services |
| Env-A | New Hampshire Code of Administrative Rules – Air Related Programs |
| ERC | Emission Reduction Credit |
| ft | foot or feet |
| ft3 | cubic feet |
| gal | gallon |
| HAP | Hazardous Air Pollutant |
| hp | horsepower |
| hr | hour |
| kW | kilowatt |
| lb | pound |
| LPG | Liquified Petroleum Gas |
| MM | million |
| MSDS | Material Safety Data Sheet |
| MW | megawatt |
| NAAQS | National Ambient Air Quality Standard |
| NG | Natural Gas |
| NOx | Oxides of Nitrogen |
| NSPS | New Source Performance Standard |
| PM10 | Particulate Matter < 10 microns |
| ppm | parts per million |
| psi | pounds per square inch |
| RACT | Reasonably Available Control Technology |
| RSA | Revised Statutes Annotated |
| RTAP | Regulated Toxic Air Pollutant |
| scf | standard cubic foot |
| SO2 | Sulfur Dioxide |
| TSP | Total Suspended Particulate |
| tpy | tons per consecutive 12-month period |
| USEPA | United States Environmental Protection Agency |
| VOC | Volatile Organic Compound |

## I. Facility Description and Scope of Proposed Changes

Sprague Energy Corporation's (Sprague's) River Road facility is a marine terminal involved in the import, export and storage of bulk liquid and dry materials. Site operations involve the following list of equipment that may emit air pollutants: two boilers, an emergency generator, a tank farm, and bulk loading terminal. The tank farm includes a number of liquid storage tanks that may store a range of materials. The facility also has two tall silos for storage and distribution of dry bulk materials. Sprague receives road salt and gypsum rock from barges for storage and distribution.

Certain bulk liquids stored at the facility, such as No. 6 fuel oil, require heat to maintain product in a flowable state. The heat created by the boilers is routed via a network of steam pipes to insulated tanks to maintain the desired product temperature. Permit SP-0082 allowed these boilers to fire a blend of No. 6 oil mixed with lighter fuel oil creating a No. 5 fuel oil at the facility.

The proposed changes at the facility involve the two boilers (see details in Table 1 below). Existing Boiler No. 2 is slated to be replaced with a new Cleaver Brooks boiler rated at 500 boiler-horsepower (b-hp) with a design maximum heat input rating of 20.4 MMBtu/hr. This new boiler will be capable of firing primarily pipeline natural gas with #2 fuel oil as a backup fuel. Existing Boiler #1 will be modified with a new burner allowing combustion of No. 2 fuel oil at a maximum heat input rating of 20.9 MMBtu/hr. Boiler No. 2 will primarily operate as a backup heat source when Boiler No. 1 is out of service.

## II. Emission Unit Identification

This permit covers only the devices identified in Table 1:

**Table 1 - Emission Unit Identification**

| Emission Unit ID | Device Identification | Manufacturer Model Number Serial Number | Installation Date | Maximum Design Capacity and Permitted Fuel Type(s)[1] |
|---|---|---|---|---|
| EU01 | Boiler No. 1 | Cleaver Brooks<br>CB655-500<br>L35520 | 1973 | 20.9 MMBtu/hr firing<br>No. 2 fuel oil – equivalent to 150 gal/hr |
| EU04 | Boiler No. 2 | Cleaver Brooks<br>CBLE-200-500-150ST<br>T2406-1-1 | 2011 | 20.4 MMBtu/hr firing primarily<br>Pipeline natural gas – equivalent to 0.020 mmcf/hr<br>or<br>No. 2 fuel oil – equivalent to 146 gal/hr |

## III. Stack Criteria

A. The following devices at the Facility shall have exhaust stacks that discharge without obstruction, and meet the criteria in Table 2:

[1] The hourly fuel rates presented in Table 1 are set assuming a heating value of: 140,000 Btu/gal for #2 fuel oil and 1,020 Btu/scf for natural gas.

| Table 2 - Stack Criteria | | | | |
|---|---|---|---|---|
| **Stack Number** | **Emission Unit or Pollution Control Equipment ID** | **Minimum Height (feet above ground surface)** | **Maximum Exit Diameter (ft)** | **Stack Configuration** |
| 1 | EU01 | 75 | 2.0 | Vertical |
| 2 | EU04 | 75 | 2.33 | Vertical |

B. Stack criteria described in Table 2 may be changed without prior approval from the Division provided that:

1. An air quality impact analysis is performed either by the facility or the Division (if requested by the facility in writing) in accordance with Env-A 606, *Air Pollution Dispersion Modeling Impact Analysis Requirements*, and the "Guidance and Procedure for Performing Air Quality Impact Modeling in New Hampshire," and
2. The analysis demonstrates that emissions from the modified stack will continue to comply with all applicable emission limitations and ambient air limits.

C. All air modeling data and analyses shall be kept on file at the facility for review by the Division upon request.

D. The Owner or Operator shall provide written notification to the Division of the stack change within 15 days after making the change. Such notification shall include:

1. A description of the change; and
2. The date on which the change occurred.

E. The stack criteria listed in Table 2 identifies emission points used in air dispersion modeling analysis for the Facility. Stacks not listed in Table 2, that emit RTAPs and that use either the de minimus or adjusted in-stack concentration methods to show compliance, shall discharge vertically and without obstruction.

## IV. Operating and Emission Limitations

The Owner or Operator shall be subject to the operating and emission limitations identified in Table 3:

| Table 3 - Operating and Emission Limitations | | | |
|---|---|---|---|
| **Item #** | **Requirement** | **Applicable Emission Unit** | **Regulatory Basis** |
| 1 | *Visible Emission Standard for Fuel Burning Devices Installed After May 13, 1970*<br>The average opacity from fuel burning devices installed after May 13, 1970 shall not exceed 20 percent for any continuous 6-minute period[2]. | EU01 & EU04 | Env-A 2002.02 |

[2] Compliance with visible emission limitations shall be determined using 40 CFR 60, Appendix A, Method 9, upon request by the Division.

| Table 3 - Operating and Emission Limitations | | | |
|---|---|---|---|
| **Item #** | **Requirement** | **Applicable Emission Unit** | **Regulatory Basis** |
| 2 | *Activities Exempt from Visible Emission Standards*<br>The average opacity shall be allowed to be in excess of those standards specified in Env-A 2002.02 for one period of 6 continuous minutes in any 60 minute period during startup, shutdown, malfunction, soot blowing, grate cleaning, and cleaning of fires. | EU01 | Env-A 2002.04(c) |
| 3 | *Activities Exempt from Visible Emission Standards*<br>For those steam generating units subject to 40 CFR 60, no more than one of the following two exemptions shall be taken:<br>a. During periods of startup, shutdown and malfunction, average opacity shall be allowed to be in excess of 20% for one period of 6 continuous minutes in any 60-minute period; or<br>b. During periods of normal operation, soot blowing, grate cleaning, and cleaning of fires, average opacity shall be allowed to be in excess of 20% but not more than 27% for one period of 6 continuous minutes in any 60-minute period. | EU04 | Env-A 2002.04(a) |
| 4 | *Activities Exempt from Visible Emission Standards*<br>Exceedances of the opacity standard in Env-A 2002 shall not be considered violations if the Owner or Operator demonstrates to the Division that such exceedances:<br>a. Were the result of the adherence to good boiler operating practices which, in the long term, result in the most efficient or safe operation of the boiler;<br>b. Occurred during periods of cold startup of a boiler over a continuous period of time resulting in efficient heat-up and stabilization of its operation and the expeditious achievement of normal operation of the unit;<br>c. Occurred during periods of continuous soot blowing of the entire boiler tube section over regular time intervals as determined by the operator and in conformance with good boiler operating practice; or<br>d. Were the result of the occurrence of an unplanned incident in which the opacity exceedance was beyond the control of the operator and in response to such incident, the operator took appropriate steps in conformance with good boiler operating practice to eliminate the excess opacity as quickly as possible. | EU01 & EU04 | Env-A 2002.04(d), (e), and (f) |
| 5 | Particulate Emission Standards for Fuel Burning Devices Installed After May 13, 1970 but Before January 1, 1985<br>Boiler #1 particulate emissions are limited to 0.50 lb/MMBTU. | EU01 | Env-A 2002.07(c)(2) |

| Table 3 - Operating and Emission Limitations | | | |
|---|---|---|---|
| **Item #** | **Requirement** | **Applicable Emission Unit** | **Regulatory Basis** |
| 6 | Particulate Emission Standards for Fuel Burning Devices Installed On or After January 1, 1985<br>Boiler #2 particulate emissions are limited to 0.30 lb/MMBTU. | EU04 | Env-A 2002.08 |
| 7 | *Maximum Sulfur Content Allowable in Liquid Fuels*<br>The sulfur content of No. 2 oil shall not exceed 0.4 percent sulfur by weight. | EU01 & EU04 | Env-A 1604.01(a) |
| 8 | Sulfur Content Limitations for Gaseous Fuels<br>The sulfur content of propane/natural gas shall not exceed 15 grains of sulfur per 100 cubic feet at standard temperature and pressure. | EU01 & EU04 | Env-A 1605.01 |

## V. Monitoring and Testing Requirements

The Owner or Operator is subject to the monitoring and testing requirements as contained in Table 4:

| Table 4 - Monitoring and Testing Requirements | | | | | |
|---|---|---|---|---|---|
| **Item #** | **Parameter** | **Method of Compliance** | **Frequency** | **Applicable Unit** | **Regulatory Basis** |
| 1 | To Be Determined | When conditions warrant, the Division may require the Owner or Operator to conduct stack testing in accordance with USEPA or other Division approved methods. | Upon request by the Division | EU01 & EU04 | RSA 125-C:6, XI |
| 2 | Sulfur Content of Liquid Fuels | Conduct testing in accordance with appropriate ASTM test methods or retain delivery tickets in accordance with Table 5, Item 4 and 5 in order to demonstrate compliance with the sulfur content limitation provisions specified in this permit for liquid fuels. | For each delivery of fuel oil/diesel to the facility | EU01 & EU04 | Env-A 806.02 & Env-A 806.05 |
| 3 | Sulfur content of gaseous fuels | Conduct testing to determine the sulfur content in grains of sulfur per 100 cubic feet, of gaseous fuels. | Upon written request by EPA or DES | EU04 | Env-A 806.03 |

## VI. Recordkeeping Requirements

The Owner or Operator shall be subject to the recordkeeping requirements identified in Table 5:

| Table 5 - Recordkeeping Requirements | | | | |
|---|---|---|---|---|
| **Item #** | **Requirement** | **Duration/ Frequency** | **Applicable Unit** | **Regulatory Basis** |
| 1 | *Record Retention and Availability*<br>Keep the required records on file. These records shall be available for review by the Division upon request. | Retain for a minimum of 5 years | EU01 & EU04 | Env-A 902 |
| 2 | *General Recordkeeping Requirements for Combustion Devices*<br>Maintain the following records of fuel characteristics and utilization for the fuel used in the combustion devices:<br>a. Type (e.g. #2 fuel oil, natural gas) and amount of fuel burned in each device, or type and amount of fuel burned in multiple devices and hours of operation of each device to be used to apportion fuel use between the multiple devices. | Monthly | EU01 & EU04 | Env-A 903.03 |
| 3 | *General $NO_x$ Recordkeeping Requirements*<br>If the actual annual $NO_x$ emissions from all permitted devices located at the Facility are greater than or equal to 10 tpy, then record the following information:<br>a. Identification of each fuel burning device;<br>b. Operating schedule during the high ozone season (June 1 through August 31) for each fuel burning device identified in Table 5, Item 2.a, above, including:<br>1. Typical hours of operation per day;<br>2. Typical days of operation per calendar month;<br>3. Number of weeks of operation;<br>4. Type and amount of each fuel burned;<br>5. Heat input rate in MMBtu/hr;<br>6. Actual NOx emissions for the calendar year and a typical high ozone day during that calendar year; and<br>7. Emission factors and the origin of the emission factors used to calculate the NOx emissions. | Maintain Up-to-Date Data | EU01 & EU04 | Env-A 905.02 |
| 4 | *Gaseous Fuel Recordkeeping Requirements*<br>Maintain one of the following:<br>a. Sulfur content as percent sulfur by weight or in grains per 100 cubic feet of fuel;<br>b. Documentation that the fuel source is from a utility pipeline; or<br>c. Documentation that the fuel meets state sulfur limits. | For any change in natural gas fuel supplier but at least annually | EU04 | Env-A 903.03 |
| 5 | *Liquid Fuel Oil Recordkeeping Requirements*<br>In lieu of sulfur testing pursuant to Table 4, Item 2, the Owner or Operator may maintain fuel delivery tickets that contain the following information:<br><br>For #2 Fuel Oil:<br>A written statement from the fuel supplier that the sulfur content of the fuel as delivered does not exceed state or federal standards for that fuel. | Whenever there is a change in fuel supplier but at least annually | EU01 & EU04 | Env-A 806.05 |

| Table 5 - Recordkeeping Requirements | | | | |
|---|---|---|---|---|
| **Item #** | **Requirement** | **Duration/ Frequency** | **Applicable Unit** | **Regulatory Basis** |
| 6 | <u>*NSPS Recordkeeping Requirements for Small Steam Generating Units*</u><br>Maintain the following records for Boiler2:<br>a. Amount of fuel combusted in boiler; and<br>b. For #2 fuel oil, copies of fuel supplier certificates which include:<br>1. The name of the fuel oil supplier;<br>2. A statement that the oil complies with ASTM D396-78, 89, 90, 92, 96, or 98, Standard Specifications for Fuel Oils, for distillate oil; and<br>3. Sulfur content of the oil. | Monthly | EU04 | 40 CFR 60.48c(f) and (g) (Subpart Dc) |

## VII. Reporting Requirements

A. Pursuant to Env-C 203.02(b), *Date of Issuance or Filing*, written documents shall be deemed to have been filed with or received by the Division on the actual date of receipt by the Division, as evidenced by a date stamp placed on the document by the Division in the normal course of business.

B. All emissions data submitted to the Division shall be available to the public. Claims of confidentiality for any other information required to be submitted to the Division pursuant to this permit shall be made at the time of submission in accordance with Env-A 103, *Claims of Confidentiality*.

C. The Owner or Operator shall be subject to the reporting requirements identified in Table 6 below.

| Table 6 - Reporting Requirements | | | | |
|---|---|---|---|---|
| **Item #** | **Requirement** | **Frequency** | **Applicable Emission Unit** | **Regulatory Basis** |
| 1 | <u>*Annual Emissions Report*</u><br>Submit an annual emissions report which shall include the following information:<br>a. Actual calendar year emissions from each emission unit of $NO_x$, CO, $SO_2$, and TSP, VOCs and HAPs;<br>b. The methods used in calculating such emissions in accordance with Env-A 705.02, *Determination of Actual Emissions for Use in Calculating Emission-Based Fees*; and<br>c. All information recorded in accordance with Table 5, Items 2, 4, and 5. | Annually (Received by DES no later than April 15th of the following year) | EU01 & EU04 | Env-A 907.01 |

| Table 6 - Reporting Requirements | | | | |
|---|---|---|---|---|
| **Item #** | **Requirement** | **Frequency** | **Applicable Emission Unit** | **Regulatory Basis** |
| 2 | <u>*$NO_x$ Emission Statements Reporting Requirements*</u><br>If the actual annual $NO_x$ emissions for the Facility are greater than or equal to 10 tpy, then include the following information with the annual emission report:<br>a. A breakdown of $NO_x$ emissions reported pursuant to Table 6, Item 1 by month; and<br>b. All data recorded in accordance with Table 5, Item 3. | Annually (Received by DES no later than April 15th of the following year) | EU01 & EU04 | Env-A 909 |
| 3 | <u>*Permit Deviation Reporting Requirements*</u><br>Report permit deviations that cause excess emissions in accordance with Condition VIII.B. | Within 24 hours of discovery of excess emission | EU01 & EU04 | Env-A 911.04(b)(1) |
| 4 | <u>*Emission Based Fees*</u><br>Pay emission-based fees in accordance with Condition X. | Annually (Received by DES no later than April 15th of the following year) | EU01 & EU04 | Env-A 700 |
| 5 | <u>*NSPS Construction and Startup Notifications*</u><br>Submit notifications to the Division and USEPA Region 1 of construction and start up as described below. The initial notification shall include all of the information specified below. Subsequent notifications shall describe changes, if any, to the information submitted in the initial notification.<br>a. The design heat input capacity of the boiler;<br>b. Identification of fuels to be combusted in the boiler;<br>c. If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for the boiler (e.g., a copy of this permit); and<br>d. The annual capacity factor at which the Owner or Operator anticipates operating the boiler based on all fuels combined and each individual fuel.<br>The address for USEPA Region 1 is:<br>USEPA New England<br>Attn: Air Compliance Clerk<br>5 Post Office Square<br>Suite 100 (OES04-2)<br>Boston, MA 02109-3912 | Notifications:<br>1) Date construction of the boiler is commenced, postmarked no later than 30 days after such date; and<br>2) Actual date of initial startup of the boiler, postmarked within 15 days after such date. | EU04 | 40 CFR 60.48c(a) (Subpart Dc) |

| Table 6 - Reporting Requirements | | | | |
|---|---|---|---|---|
| **Item #** | **Requirement** | **Frequency** | **Applicable Emission Unit** | **Regulatory Basis** |
| 6 | <u>*NSPS Fuel Reports for Small Steam Generating Units*</u><br>Submit to the Division and EPA Region 1 a semi-annual fuel certification report for fuel oil consumed in Boiler 2 that includes the following information:<br>a. The calendar dates covered in the reporting period;<br>b. The types of fuels combusted during the reporting period;<br>c. The 30-day average sulfur content (weight percent) of fuel oil combusted during the reporting period;<br>d. Copies of fuel supplier certificates maintained pursuant to Table 5, Item 6; and<br>e. A certified statement signed by the Owner or Operator of the Facility that the data in the report represents all of the fuel combusted during the reporting period; and<br>f. Excess emission reports for any excess emissions from the boilers which occur during the reporting period.<br><br>The address for USEPA Region 1 is:<br>USEPA New England<br>Attn: Air Compliance Clerk<br>5 Post Office Square<br>Suite 100 (OES04-2)<br>Boston, MA 02109-3912 | Semiannually (Received by DES by July 31st and January 31st) | EU04 | 40 CFR 60.48c(e) (Subpart Dc) |

## VIII. Permit Deviation Reporting Requirements

A. Env-A 101, *Definitions*:

1. A *permit deviation* is any occurrence that results in an excursion from any emission limitation, operating condition, or work practice standard as specified in either a Title V permit, state permit to operate, temporary permit or general state permit issued by the Division.
2. An *excess emission* is an air emission rate that exceeds any applicable emission limitation.

B. Env-A 911.04(b)(1), *Reporting Requirements*: In the event of a permit deviation that causes excess emissions, notify the Division of the permit deviation and excess emissions by telephone (603-271-1370), fax (603-271-7053) or e-mail (pdeviations@des.nh.gov), within 24 hours of discovery of the permit deviation, unless it is a Saturday, Sunday, or state or federal legal holiday, in which event, the Division shall be notified on the next day which is not a Saturday, Sunday, or state or federal legal holiday.

## X. Permit Amendments

A. Env-A 612.01, *Administrative Permit Amendments*:

1. An administrative permit amendment includes the following:
   a. Corrects typographical errors;
   b. Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;
   c. Requires more frequent monitoring or reporting; or
   d. Allows for a change in ownership or operational control of a source provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Division.
2. The Owner or Operator may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.

B. Env-A 612.03, *Minor Permit Amendments: Temporary Permits and State Permits to Operate*:

1. The Owner or Operator shall submit to the Division a request for a minor permit amendment for any proposed change to any of the conditions contained in this permit which will not result in an increase in the amount of a specific air pollutant currently emitted by the emission units listed in Condition II and will not result in the emission of any air pollutant not emitted by the emission unit.
2. The request for a minor permit amendment shall be in the form of a letter to the Division and shall include the following:
   a. A description of the proposed change; and
   b. A description of any new applicable requirements that will apply if the change occurs.
3. The Owner or Operator may implement the proposed change immediately upon filing a request for the minor permit amendment.

C. Env-A 612.04, *Significant Permit Amendments: Temporary Permits and State Permits to Operate*:

1. The Owner or Operator shall submit a written request for a permit amendment to the Division at least 90 days prior to the implementation of any proposed change to the physical structure or operation of the emission units covered by this permit which increases the amount of a specific air pollutant currently emitted by such emission unit or which results in the emission of any regulated air pollutant currently not emitted by such emission unit.
2. A request for a significant permit amendment shall include the following:
   a. A complete application form, as described in Env-A 1703 through Env-A 1708, as applicable;
   b. A description of:
      i. The proposed change;
      ii. The emissions resulting from the change; and
      iii. Any new applicable requirements that will apply if the change occurs; and
      iv. Where air pollution dispersion modeling is required for a device pursuant to Env-A 606.02, the information required pursuant to Env-A 606.03.
3. The Owner or Operator shall not implement the proposed change until the Division issues the amended permit.

## XI. Inspection and Entry

DES personnel shall be granted access to the facility covered by this permit, in accordance with RSA 125-C:6, VII for the purposes of: inspecting the proposed or permitted site; investigating a complaint; and assuring compliance with any applicable requirement found in the New Hampshire Rules Governing the Control of Air Pollution and/or conditions of any permit issued pursuant to Chapter Env-A 600.

## XII. Emission-Based Fee Requirements

A. Env-A 705.01, *Emission-based Fees*: The Owner or Operator shall pay to the Division each year an emission-based fee for emissions from the emission units listed in Condition II.

B. Env-A 705.02, *Determination of Actual Emissions for use in Calculating of Emission-based Fees*: The Owner or Operator shall determine the total actual annual emissions from the emission units listed in Condition II for each calendar year in accordance with the methods specified in Env-A 616, *Determination of Actual Emissions*. If the emissions are determined to be less than one ton, the emission-based fee shall be calculated using an emission-based multiplier of one ton.

C. Env-A 705.03, *Calculation of Emission-based Fees*: The Owner or Operator shall calculate the annual emission-based fee for each calendar year in accordance with the procedures specified in Env-A 705.03 and the following equation:

$$FEE = E * DPT$$

where:

FEE = The annual emission-based fee for each calendar year as specified in Env-A 705;
E = Total actual emissions as determined pursuant to Condition XII.B; and
DPT = The dollar per ton fee the Division has specified in Env-A 705.03[3].

[3] For additional information on emission-based fees, visit the DES website at http://des.nh.gov/organization/divisions/air/pehb/apps/fees.htm.